

E-Commerce: **Product Range Analysis**

Michael Hasterok

Masterschool Student

July 2022

Agenda



01. Introduction 3

- Data set
- Dashboard
- Insights overview

03. Summary 9 - 10

- General conclusion and recommendations

02. Insights 5 - 8

- Individual detailed views from the dashboard
- Analyzing sales figures
- Analyzing customer behavior

01. Introduction

Dataset

The data record comes from an online trade and contains original information about: Invoice Number, Stock Code, Article Description, Sales Quantity, Invoice Date, Unit Price and Customer ID.

The data was collected over a period of 2018.11.29 to 2019.12.07.

For the evaluation, the revenue was also calculated and the articles divided into 6 different groups. The customers were divided quarterly into recency, frequency and monetary values. An RFM score was calculated from these values and the customers divided into 3 groups of different importance for the company.

Dashboard

An interactive dashboard is available in Power Bi. Insights from the two pages 'Products Sales Revenue' and 'Customer Behavior' created therein are presented in this presentation.

Insights overview

The company has a total turnover of 9.73 million for the period. Sales are increasing.

There is a dominant product group 'kitchen'. The customer base in the upper and middle segment is very stable. The main turnover is made by the premium customers.



02. Insights



Graphic insights



E-COMMERCE

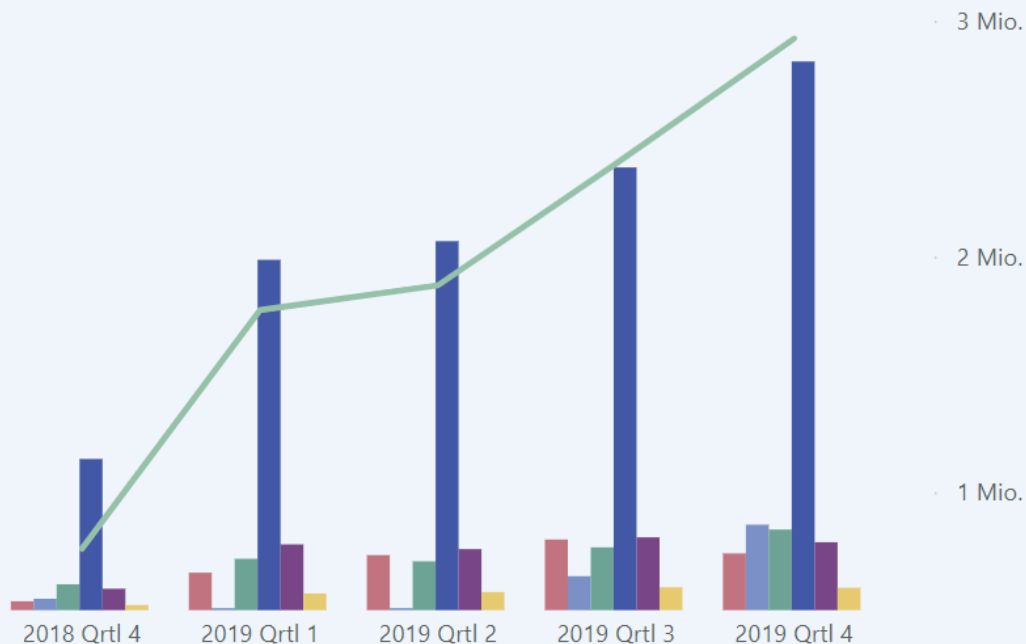
/

Products Sales Revenue

Revenue by Date and Category

Category

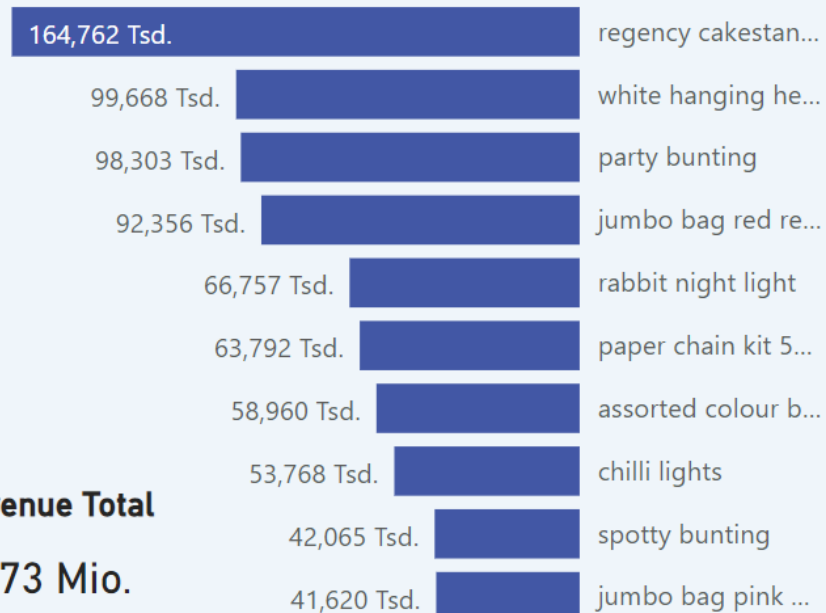
- bag
- christmas
- decoration
- kitchen
- retrospot
- sign
- Revenue



Top 10 - Revenue

Revenue Total

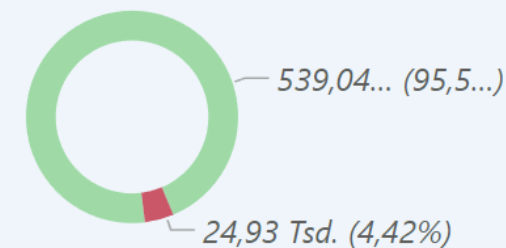
9,73 Mio.

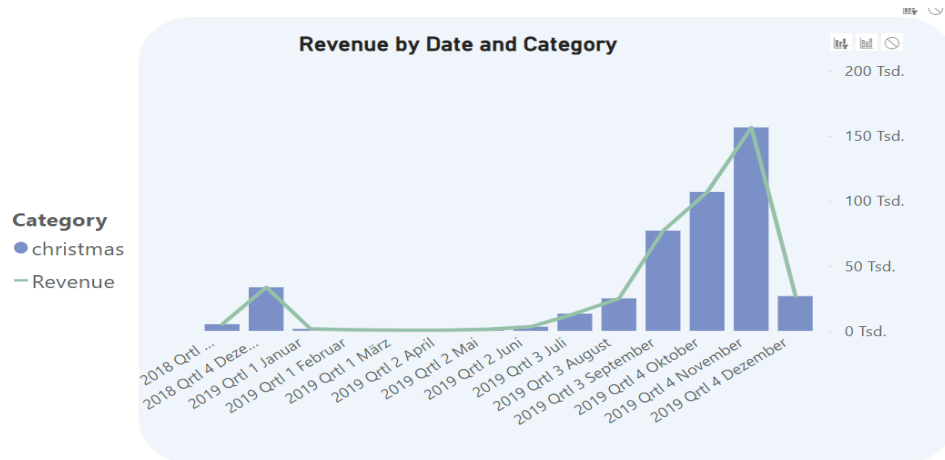


Category Percentage

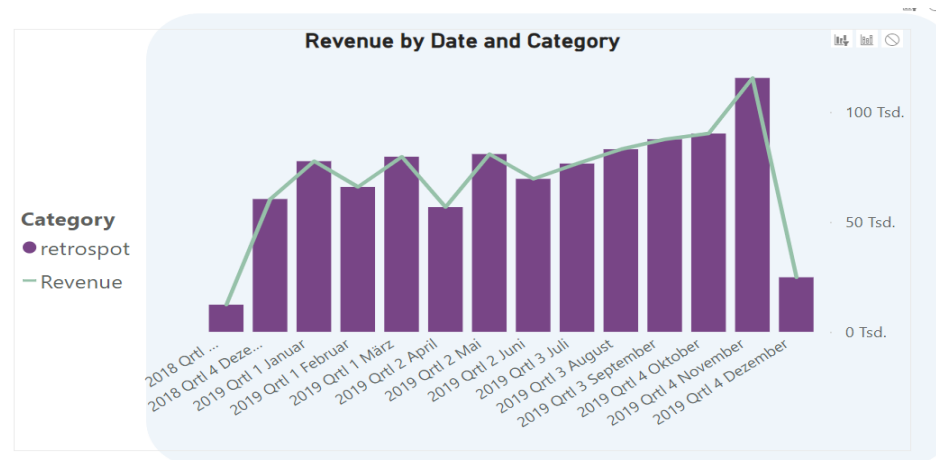


Purchases Count vs. Cancellations

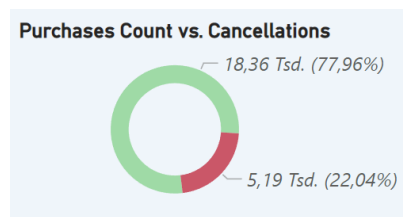
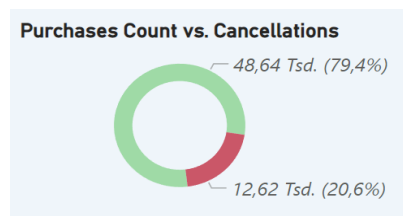




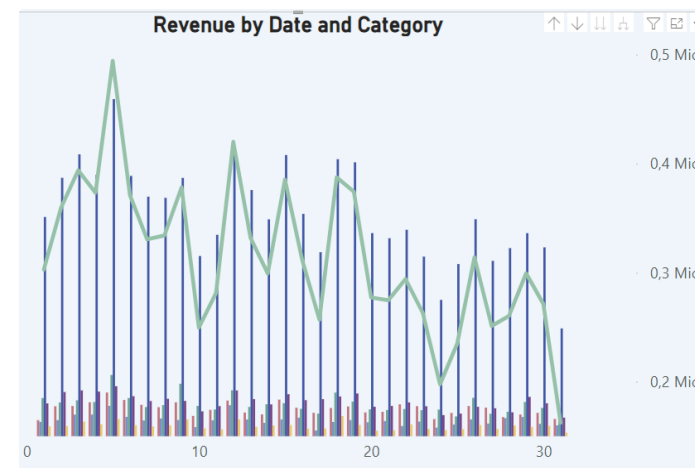
„christmas“ Category has its highest revenue in November (top product is „paper chain kit 50's christmas“)



all categories show increases in November, but 'retrospot' category is fairly stable throughout the year. The favorite is 'jumbo bag red retrospot'



While cancellations totaled 4.42% (24,93 thousand), they were particularly high for 'retrospot' at 20.6% and 'sign' at 22.04%.

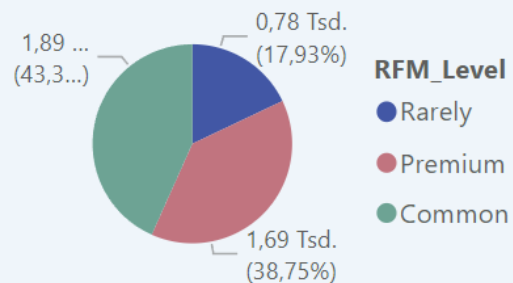


All sales by days of the month. Sales increase for the first 5 days and then decrease towards the end of the month.

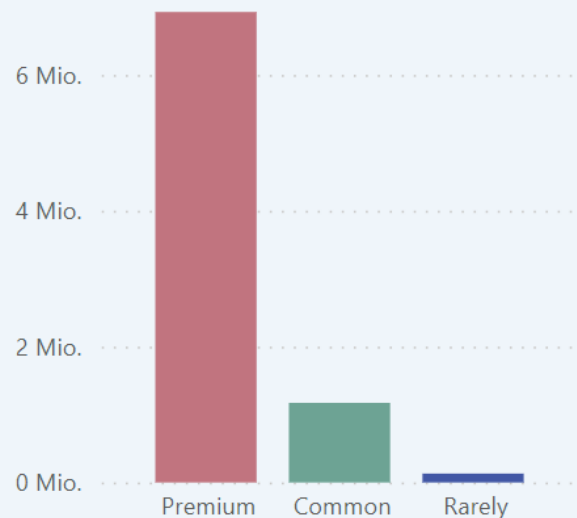


E-COMMERCE / Customer Behavior

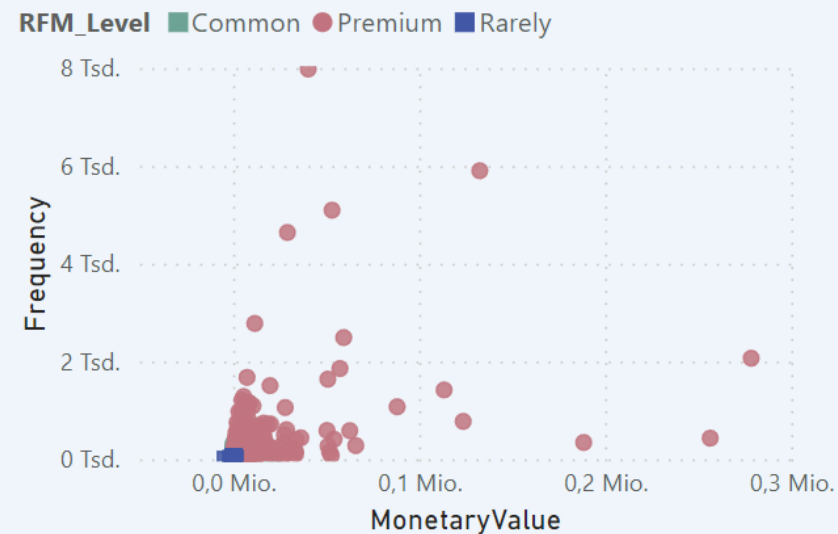
Customer Count by RFM_Level



SUM MonetaryValue by RFM_Level



RFM_Level, MonetaryValue und Frequency



AVG Recency

92

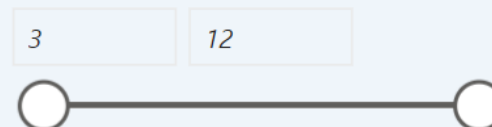
AVG Frequency

93

AVG Moneytary

1,88 Tsd.

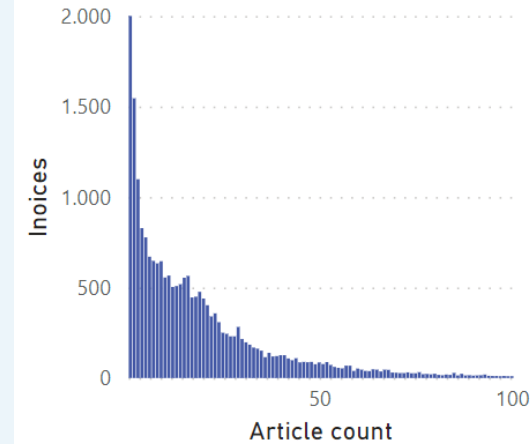
RFM_Score



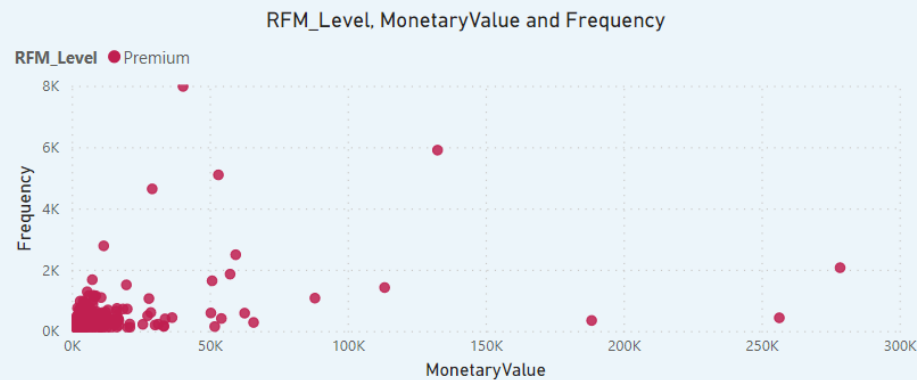
Distribution Customer

Customer Group / Value	Rarely	Common	Premium	TOTAL
SUM Customer	784	1894	1694	4372
AVG_Recency	220	99	26	92
AVG_Frequency	11	36	194	93
AVG_Monetary	167.01	618.75	4090.00	1880.00

Number of Articles per Invoice



There are an average of 21 items in the shopping cart.



There are also 471 customer with the very highest RFM Score of 12. 5 of them each generated a turnover of over 100000.

The very highest Frequency is 7983. This means that an average of 21 invoices per day were issued to this customer during this period (373 days).

03. Summary

- ❑ The product group with the largest turnover is 'Kitchen', with 6.32 million of the total turnover of 9.73 million. These products are therefore responsible for 65% of total sales. The product achieved the highest sales 'regency cakestand 3 tier' – 164.762 Tsd.
- ❑ The second main group together form the three groups 'Decoration', 'Retrosport' and 'Bag'. Together they are responsible for 2.67 million (27.4 %) sales.
Here the articles 'white hanging heart t-light holder' and 'jumbo bag red retrosport' are particularly successful. More such products should be added to the range.
- ❑ The sale of Christmas items starts in July and peaks in November.
- ❑ The lowest turnover is in the 'Sign' category. 289.18 Tsd.
There is also the problem with a high cancelation rate of 22.04 %. Possible causes for the cancelation rates can be a bad product description or a bad product. There should be an improvement here. It would also make sense to check adjustments with an A/B test.
- ❑ The 'Retrosport' has also an high cancelation rate of 20.6 % and should also be improved.
- ❑ All sales by days of the month. Sales increase for the first 5 days and then decrease towards the end of the month.
Advertising measures that encourage spontaneous purchases should therefore be carried out at the beginning of the month.
- ❑ The stock can be cleaned by 5 items without any revenue. (hanging ridge glass t-light holder, glass cake cover and plate, travel card wallet dotcomgiftshop, "paper craft , little birdie", black cherry lights)
I would also suggest making a list of items with very low sales to filter them out.



- ❑ Although the two customer groups 'Premium' and 'Common' are similar in number, by far the largest turnover is made by the 'Premium' customers. Here, the largest average number of invoices per day is 21. These customers are most likely among the resellers and represent the most important part for the company. While a 'Common' customer made an average of 36 purchases, a 'Premium' customer made an average of 194 purchases. The infrastructure of the purchase process should be designed as friendly as possible for a high frequency.

** created July 2022, Michael Hasterok **